AD-A143 484 NATIONAL PROGRAM FOR INSPECTION OF NON-FEDERAL DAMS 1/1
LANGERS POND DAM (CT.. (U) CORPS OF ENGINEERS WALTHAM MA
NEW ENGLAND DIV FEB 80

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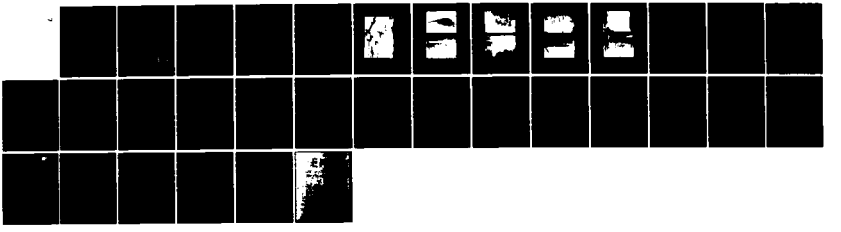

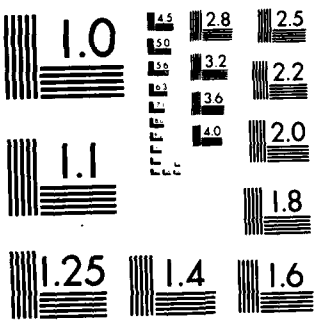

Wilsonville Connecticut
French River

LANGERS POND DAM
CT-00186

Feb. 1980

NATIONAL DAM INSPECTION PROGRAM
CORPS OF ENGINEERS

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CT 00186	2. GOVT ACCESSION NO. AD A143 404	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* Langers Pond Dam NATIONAL PROGRAM FOR INSPECTION OF NON-FEDERAL DAMS		5. TYPE OF REPORT & PERIOD COVERED INSPECTION REPORT 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DIVISION		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS DEPT. OF THE ARMY, CORPS OF ENGINEERS NEW ENGLAND DIVISION, NEDED 424 TRAPELO ROAD, WALTHAM, MA. 02254		12. REPORT DATE Feb. 1980 13. NUMBER OF PAGES 35
14. MONITORING AGENCY NAME & ADDRESS(*if different from Controlling Office*)		15. SECURITY CLASS. (*of this report*) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

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17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

Cover program reads: Phase I Inspection Report, National Dam Inspection Program; however, the official title of the program is: National Program for Inspection of Non-Federal Dams; use cover date for date of report.

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

DAMS, INSPECTION, DAM SAFETY,

Wilsonville Conn.
French River
Langers Pond Dam

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

Langers Pond Dam is a 10.5 foot high, "L-shaped", run-of-the-river stone masonry gravity structure. It is 160 feet in length, and constructed of stone masonry with a concrete section along the upstream face. Based upon the visual inspection the project appears to be in good condition.

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INSPECTION REPORT
LANGERS POND DAM
CT 00186

Langers Pond Dam is a 10.5 foot high, "L-shaped", run-of-the-river stone masonry gravity structure. It is located on the French River in Wilsonville, Connecticut and owned by the Simonds Company, also of Wilsonville. The dam was constructed in 1880 to supply water for the generation of power for the mill at the dam, now the Simonds Company. In recent times, the power generating facilities have been inoperable, however, the present owner is in the process of restoring these facilities. The drainage area is approximately 97 square miles and the maximum impoundment to the top of the dam is 156 acre-feet.

Because the dam is a run-of-the-river structure, the entire length of the dam is used as a spillway. It is 160 feet in length, and constructed of stone masonry with a concrete section along the upstream face. The concrete section is 15 inches wide and forms the crest of the dam at elevation 383.0. The stone masonry section is about 4.5 to 5 feet wide at the top (elevation 381.0), 11 feet wide at the base (elevation 372.5), and has a stepped downstream face. The training wall at the left end of the dam is about 3.5 feet above the dam crest and is constructed of stone and mortar masonry. At the right end, the dam abuts the concrete foundation of one of the Simonds Company buildings.

There is no low-level outlet at the dam. The only method of releasing water, other than over the dam, is through the channel which was once used to supply water for generating purposes. However, at this time the channel is almost completely filled in and the gates of the upstream end are severely deteriorated.

For the owner's information and use, the following items are attached in duplicate:

1. Hydraulic/Hydrologic Computations
2. General Plan w/Typical Section and Profile
3. Photographs
4. Visual Inspection Check List

Based upon the visual inspection, the project appears to be in good condition. The following features which could influence the future condition and/or stability were identified:

1. Stones appear to have become dislodged from the downstream face at the left side of the dam (Photo 1). If not repaired, more stone may become dislodged, leaving a weak zone in this area and possibly leading to failure of the structure.

2. The downstream end of the left training wall needs repair. The wall in this area is broken up and falling into the channel. If not repaired, undermining of the left abutment may occur during high flows, leading to gradual undermining and possible failure of the left side of the dam.

3. There is no low-level outlet at the dam. However, if the existing sluice way and gates are repaired, this should provide a sufficient outlet.

The owner should retain a registered professional engineer qualified in dam design and inspection to perform services pertaining to the following items. The engineer should establish correction measures which should then be instituted by the owner.

1. An attempt should be made to inspect the dam during period of low flow, so a more detailed inspection can be performed.

2. Recommendations should be made for repair of the downstream face of the dam and the left training wall.

3. The stone masonry should be repointed if the more detailed inspection reveals the need for this repair.

Also, the owner should insure that the crest of the dam and the channel at the toe of the dam remain clear of debris.

OVERVIEW PHOTO
(February, 1980)

US ARMY ENGINEER DIV. NEW ENGLAND CORPS OF ENGINEERS WALTHAM, MASS	NATIONAL PROGRAM OF	Langers Pond Dam	Wilsonville	DATE Dec. 1980
CAHN ENGINEERS INC. WALLINGFORD, CONN. ENGINEER	INSPECTION OF NON-FED DAMS	French River	CONNECTICUT	CE # 27 785 KF
				PAGE ix

Photo 1-Crest and downstream face of dam from the fill by the outlet channel at the right end of the dam. Note displacement of stones at left end of dam (Dec. 1980).

Photo 2 - Embankment and opening at road just upstream from dam (Dec. 1980).

US ARMY ENGINEER DIV. NEW ENGLAND CORPS OF ENGINEERS WALTHAM, MASS	NATIONAL PROGRAM OF	Langers Pond Dam French River Wilsonville, CT
CAHN ENGINEERS INC. WALLINGFORD, CONN ENGINEER	INSPECTION OF NON-FED. DAMS	CE# 27 785 KF DATE Dec. 19 0 PAGE C-1

Photo 3 - Downstream face of dam where it abuts factory foundation at right end of dam (Dec. 1980).

Photo 4 - Masonry training wall and downstream face of dam at left end. Masonry retaining or cut-off wall at right side of photo in background (Dec. 1980).

US ARMY ENGINEER DIV. NEW ENGLAND CORPS OF ENGINEERS WALTHAM, MASS. CAHN ENGINEERS INC. WALLINGFORD, CONN. ENGINEER	NATIONAL PROGRAM OF INSPECTION OF NON-FED. DAMS	Langers Pond Dam French River Wilsonville, CT CE# 27 785 KF DATE Dec. 1[illegible] PAGE C-2

Photo 5 - Gate hoists and remains of wooden gates. The fill placed across the upstream end of the outlet channel is barely visible at lower right (Dec. 1980).

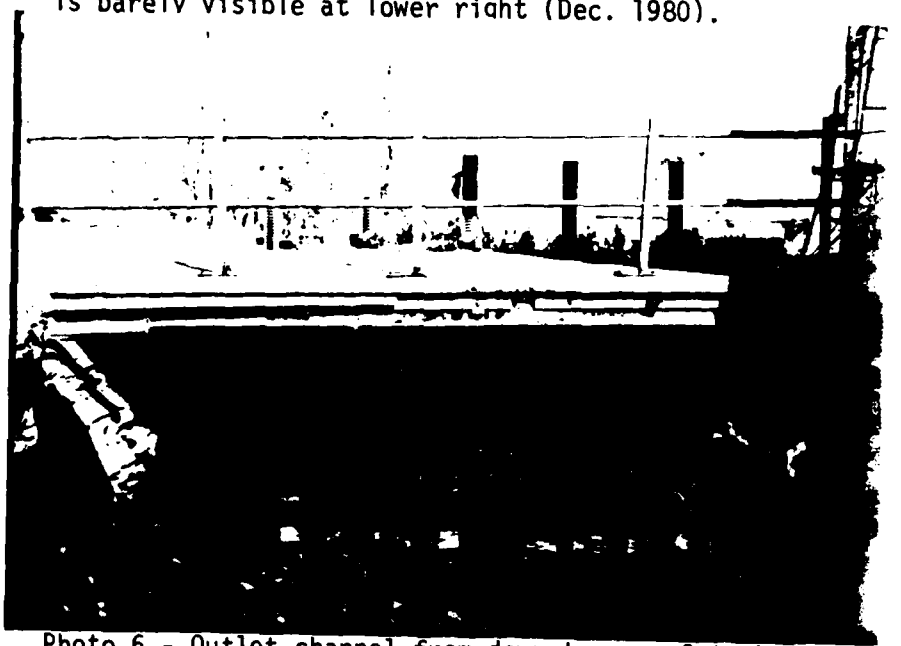


Photo 6 - Outlet channel from downstream. Gate hoists are visible in background, fill just above building housing the turbine is visible at lower left (Dec. 1980).

Photo 7 - Abandoned turbine looking downstream from fill in outlet channel. Drain holes in floor of concrete structure, allow water seeping through fill to flow back to the river,

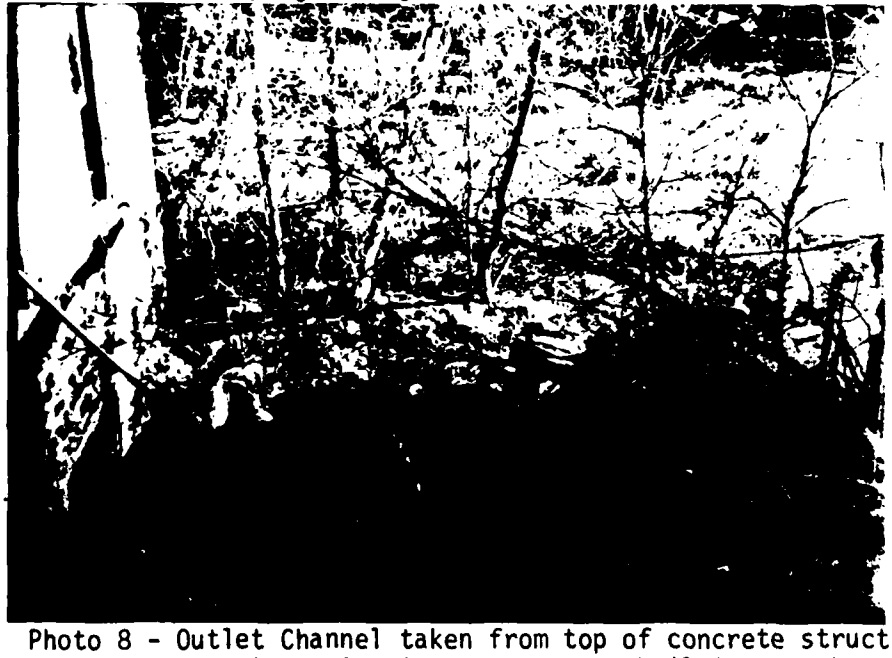


Photo 8 - Outlet Channel taken from top of concrete structure containing turbine. Openings at base of building to the left are for turbine which no longer exists (Dec. 1980).

VISUAL INSPECTION CHECK LIST
PARTY ORGANIZATION

PROJECT Rogers Park Dam — DATE: December 1, 1979

TIME: 10:00 AM to 1:00 PM

WEATHER: Sunny, 50°F

W.S. ELEV. 393.3 U.S. ____ DN.S

PARTY:	INITIALS:	DISCIPLINE:
1. Peter M. Heyner	PMH	Cahn-Geotechnical
2. Jay A. Costello	JAC	Cahn-Geotechnical
3. Frank Segaline	FS	Cahn-Survey
4. Murali Athreya	MA	DTC-H/H
5.		
6.		

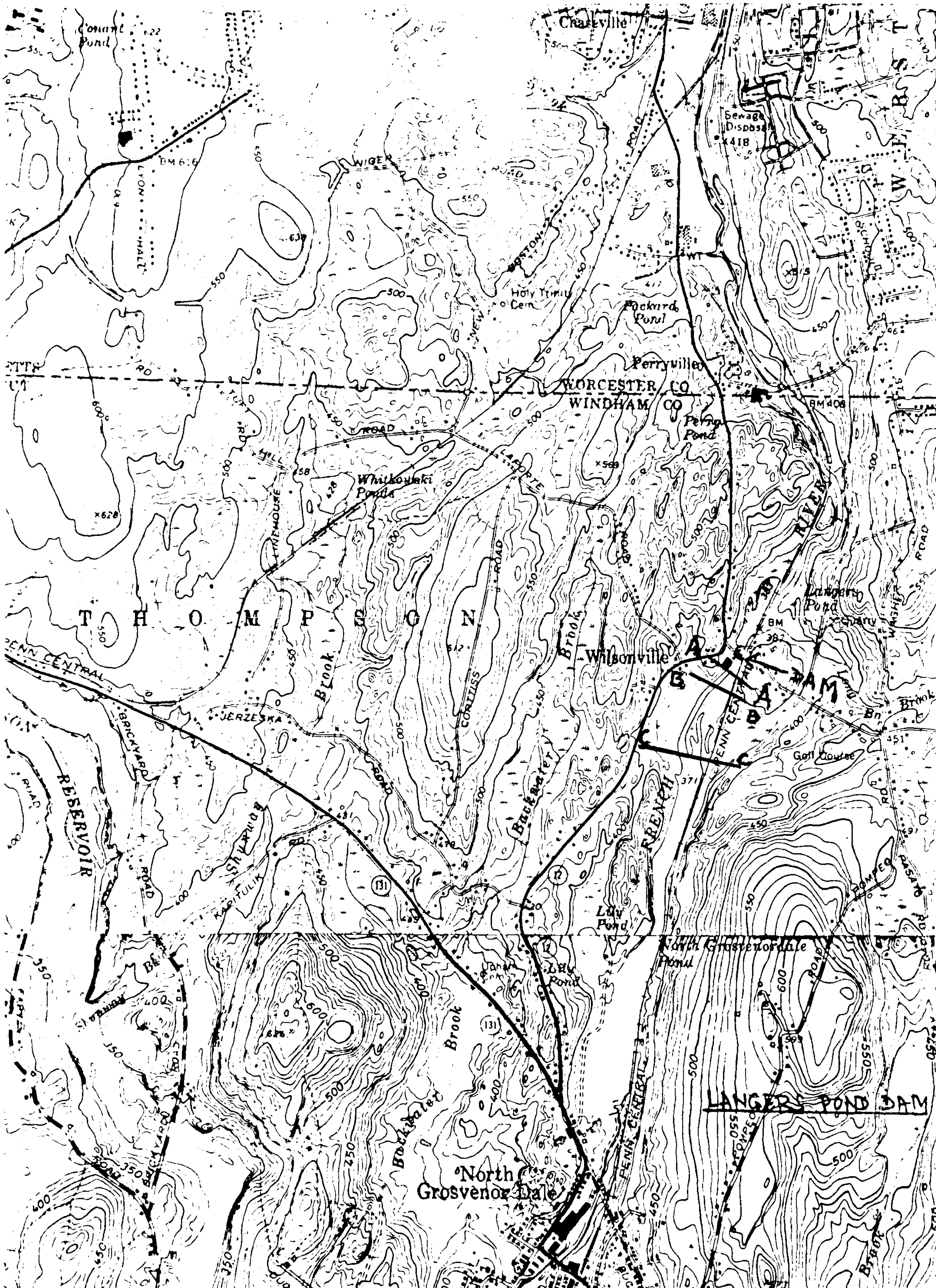
	PROJECT FEATURE	INSPECTED BY	REMARKS
1.	Spillway	PMH, JAC, MA, FS	A-8
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

PERIODIC INSPECTION CHECK LIST

PROJECT Harper Pond Dam DATE Oct 1, 1980

PROJECT FEATURE Spillway BY [illegible]

AREA EVALUATED		CONDITION
OUTLET WORKS-SPILLWAY WEIR, APPROACH AND DISCHARGE CHANNELS		
a) Approach Channel		
General Condition		Appears good, clear
Loose Rock Overhanging Channel		None observed
Trees Overhanging Channel		
Floor of Approach Channel		Silt, sand & gravel
b) Weir and Training Walls		
General Condition of Concrete		Concrete - good stone masonry - needs repair in end. stones dislodged. East training wall needs repair.
Rust or Staining		
Spalling		None observed
Any Visible Reinforcing		
Any Seepage or Efflorescence		
Drain Holes		N/A
c) Discharge Channel		
General Condition		Fair
Loose Rock Overhanging Channel		None observed
Trees Overhanging Channel		
Floor of Channel		Some stones, wood debris
Other Obstructions		N/A


Chaseville
Conant Pond
Sewage Disposal
WIGER
BOSTON
Holy Trinity Cem
Packard Pond
Perryville
WORCESTER CO
WINDHAM CO
Perry Pond
Whitkowski Ponds
T H O M P S O N
Wilsonville
Langers Pond
Quarry
DAM
PENN CENTRAL
JERZESKA
BRICKYARD
RESERVOIR
CORTISS
Brook
FRENCH
RIVER
Lily Pond
North Grosvenordale Pond
Golf Course
POMPEO
LANGERS POND DAM
North Grosvenor Dale

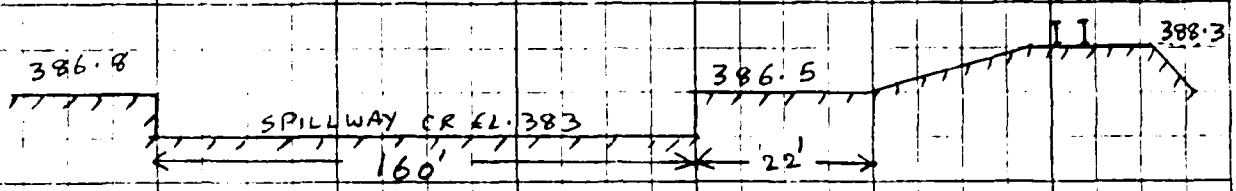
PROJECT NON FEDERAL DAM INSPECTION PROJECT NO. 80-10-19 SHEET 1 OF 14
NEW ENGLAND DIVISION COMPUTED BY [illegible] DATE 12/18/80
LANGERS POND DAM CHECKED BY E Butler Bates DATE 12/19/80

SPILLWAY CREST ELVN = 383 NGVD*

TOP OF THE DAM EL = 386.5 (ELVN OF THE LEFT ABUTMENT - CONCRETE WALL)

TOE OF THE DAM EL = 372.5

HEIGHT OF THE DAM = 14 FT (Ya)

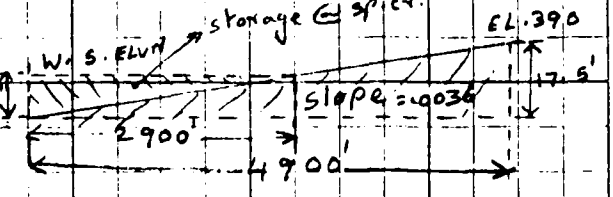


APPROXIMATE POTENTIAL OVERFLOW PROFILE
(BASED UPON CAHN INC's FIELD INFORMATION)

STORAGE

PLANIMETERING FROM USGS MAP FOR POND SURFACE AREAS:
AT EL. 383 (SPILLWAY CREST) = 18 Ac.

AT EL. 390 = 51 Ac.



A STAGE-POND AREA CURVE IS PLOTTED.

POND AREA AT TOP OF DAM ≈ 35 Ac.

AVERAGE POND AREA BET. SP.CR. & TOP OF DAM = $\frac{18+35}{2}$ = 26.5 Ac

STORAGE BETWEEN SP. CREST & TOP OF DAM = 3.5 x 26.5 = 93 Ac.Ft

STORAGE BELOW SP. CREST = $\frac{1}{3}$ x 18 x 10.5 = 63 Ac. Ft

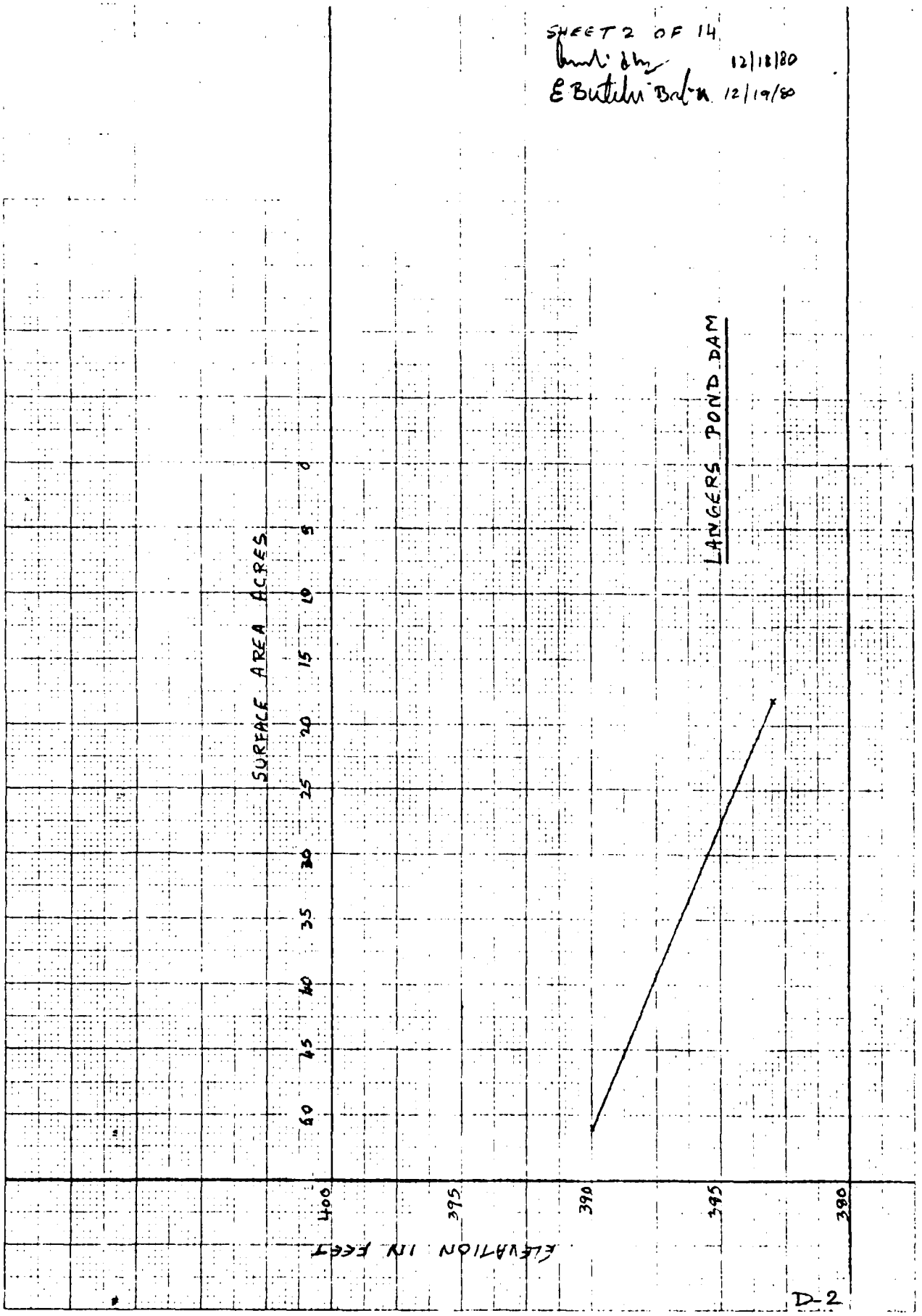
∴ MAXIMUM IMPOUNDMENT TO TOP OF DAM = 93+63 = 156 Ac.Ft(S)

* THE W.S ELVN OF 383 MSL ON THE WEBSTER, MASS USGS QUAD SHEET (1969) IS ASSUMED TO BE THE SPILLWAY CREST ELVN ON NATIONAL GEODETIC VERTICAL DATUM (NGVD). ALL OTHER ELVNS ARE REFERENCED TO THIS ASSUMED ELVN AND ARE OBTAINED BASED UPON INFORMATION FURNISHED BY CAHN, INC.

SHEET 2 OF 14

12/18/80

E Butcher Barker 12/19/80



D-2

squares to the inch

BREACH ANALYSIS

DOWNSTREAM FAILURE HAZARD:

BREACH OUTFLOW $Q_b = \frac{8}{27} W_b \sqrt{g}\, y_o^{3/2}$ BASED UPON CORPS OF ENGINEERS "RULE OF THUMB" GUIDANCE FOR ESTIMATING D/S DAM FAILURE HYDROGRAPHS

ESTIMATED BREACH WIDTH = 40% OF MID-HEIGHT LENGTH OF DAM

MID-HEIGHT LENGTH IS ASSUMED: LENGTH OF THE SPILLWAY FOR LACK OF OTHER DATA

∴ BREACH WIDTH = 160 FT.
= 0.4 x 160 = 64 FT.

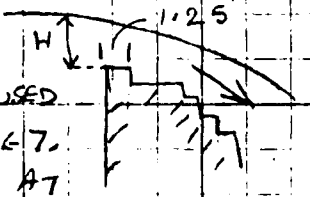
$Q_b = \frac{8}{27} \times 64 \sqrt{32.2} \times (14)^{3/2} = 5640$ CFS

PEAK FAILURE OUTFLOW $Q_{P_1} = Q_b$ + DISCHARGE OVER UNBREACHED LENGTH OF THE SPILLWAY

UNBREACHED LENGTH OF SPILLWAY = 160' − 64' = 96'

$Q_{sp} = C L H^{3/2}$

FOR BROAD CRESTED CONCRETE SPILLWAY WITH U/S FACE ASSUMED VERTICAL C = 3.5 USED



(Ref: USGS BOOK 3, CHAPTER A5, FIGURE 7, P.10 - MEASUREMENT OF PEAK DISCHARGE AT DAM BY INDIRECT METHODS)

$Q_{sp} = 3.5 \times 96 \times (3.5)^{3/2}$ FOR POOL AT TOP OF DAM
= 2200 CFS

PEAK FAILURE OUTFLOW $Q_{P_1} = 5640 + 2200 = 7840$ CFS

ESTIMATED FAILURE FLOOD DEPTH IMMEDIATELY D/S FROM DAM = 0.44 x y_o
= 0.44 x 14 = 6.2 FT

(NOTE: THE TAILWATER EFFECT DUE TO NORTH GROSVENORDALE POND LOCATED D/S DOES NOT APPEAR TO INFLUENCE THIS ANALYSIS)

PROJECT NON FEDERAL DAM INSPECTION PROJECT NO. 80-10-19 SHEET 4 OF 14
NEW ENGLAND DIVISION COMPUTED BY [illegible] DATE 12/18/80
LANGERS POND DAM CHECKED BY E. Butler Balch DATE 12/19/80

PERFORM D/S ROUTING OF PEAK FAILURE OUTFLOW

SELECT A SECTION AA 300' D/S OF THE DAM. THIS SECTION IS SELECTED TO ESTIMATE POSSIBLE FLOODING DAMAGE TO THE MANUFACTURING FACILITY (SIMONDS CO.)

USING MANNING'S EQUATION

$Q = \frac{1.486}{n} \times A \times R^{2/3} \times S^{1/2}$ $n = 0.06$ ASSUMED (stones)
$S = 0.0016$ FROM USGS Map

$= \frac{1.486}{.06} \times A \times R^{2/3} \times (.0016)^{1/2}$
$= \frac{1.0 \times A \times R^{2/3}}{}$

RIVER BED ELEVN AT SECTION AA = 372 (BASED UPON $S = .0016$)

ELVN	A sq.ft	P	R = A/P	$R^{2/3}$	Q CFS
372	0	—	—	—	0
374	64	63.7	1.0	1.0	64
376	253	126.8	2.0	1.59	402
378	565	188.9	2.99	2.08	1175
380	1000	250.5	3.99	2.52	2580
382	1412	283.2	4.99	2.92	4123
384	1884	314.9	5.98	3.30	6217
386	2415	346.1	6.98	3.65	8815

STAGE-AREA AND STAGE DISCHARGE CURVES ARE PLOTTED FOR SECTION AA

FOR PEAK FAILURE OUTFLOW $Q_{P_1} = 7840$ CFS.
ELVN = 385.2 FROM STAGE DISCHARGE CURVE
FROM STAGE-AREA CURVE AREA = 2188 sq.ft

VOLUME OF REACH $V_1 = \frac{300 \times 2188}{43,560} = 15$ AC-FT

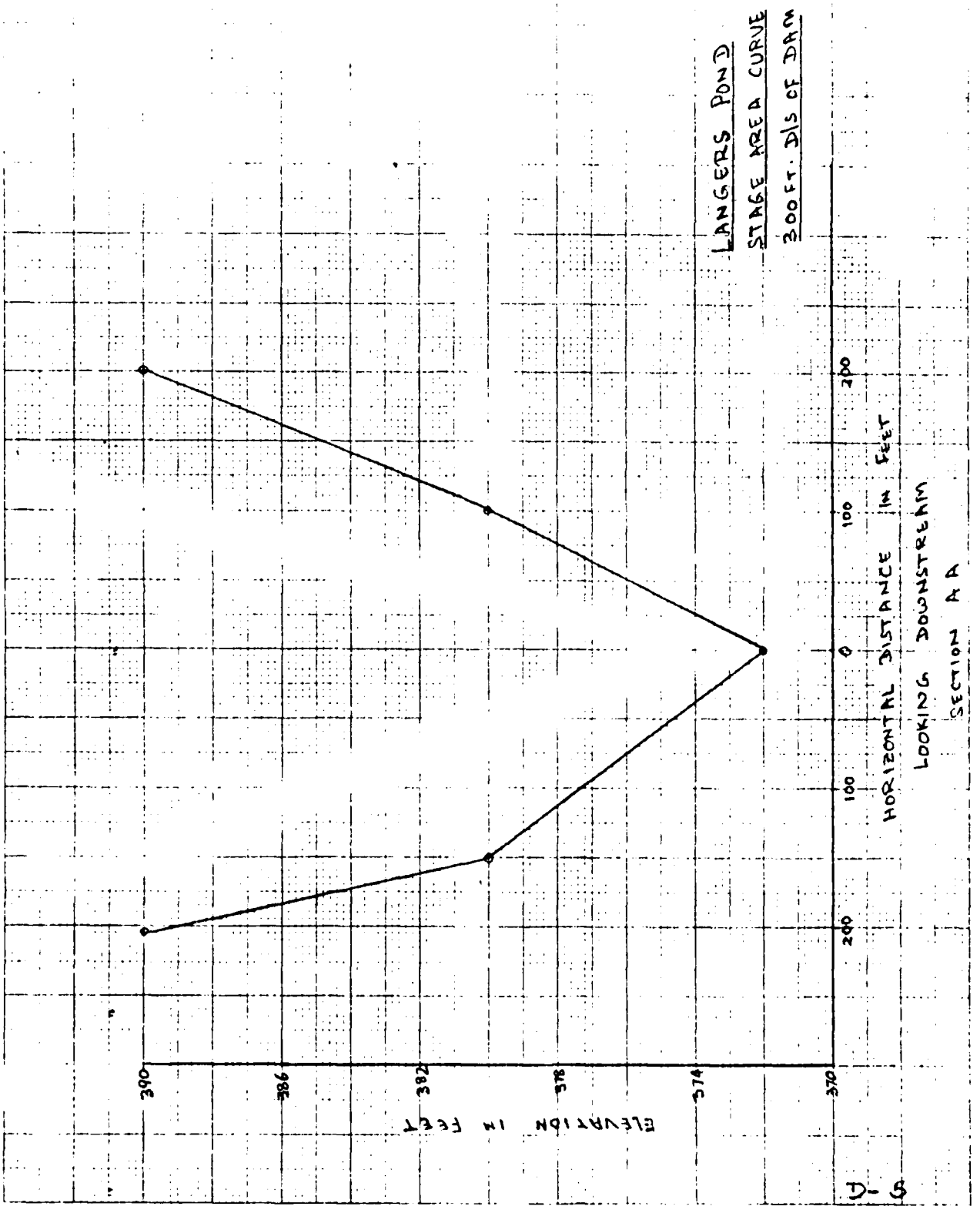
TRIAL $Q_{P_2} = Q_{P_1}\left(1 - \frac{V_1}{S}\right)$, WHERE S = STORAGE TO TOP OF DAM

$= 7840\left(1 - \frac{15}{156}\right) = 7080$ CFS

SHEET 5 OF 14

12/18/80

E. Butler Barbu 12/19/80



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SHEET 6 OF 14

12/18/80

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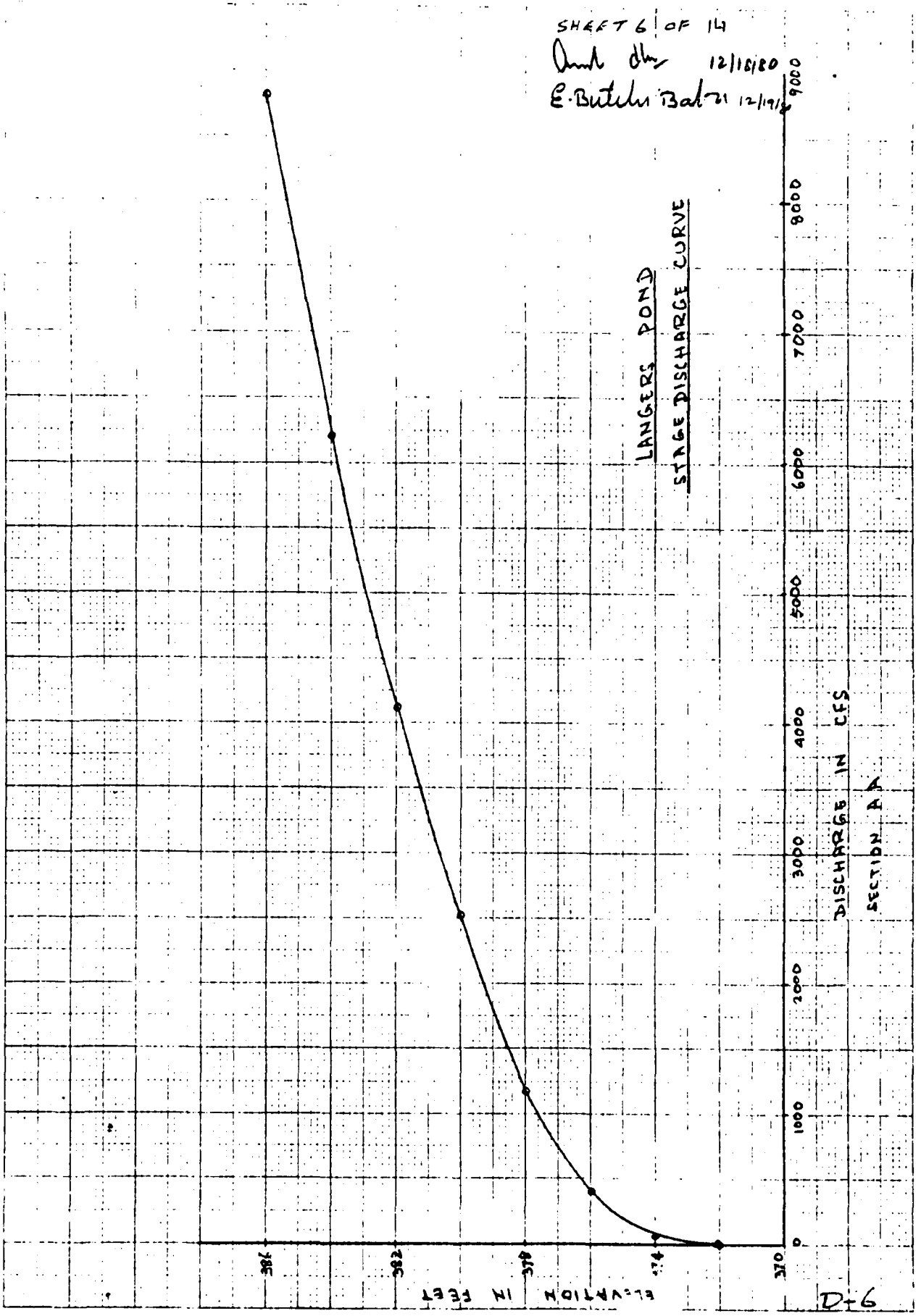


D-6

FOR THIS Q_P, THE STAGE DISCHARGE CURVE GIVES
ELVN = 384.6 AND AREA = 2035 SQ FT

$V_2 = \frac{300 \times 2035}{43,560} = 14$ AC FT

RECOMPUTING $Q_P = 7840\left(1 - \frac{14.7}{156}\right) = 7110$ CFS

FLOOD STAGE AT SECTION AA = EL. 384.6

FLOOD DEPTH AT SECTION AA = EL 384.6 − EL 372 = 12.6 FT

AND VELOCITY AT SECTION AA = $\frac{7110}{2025} = 3.5$ FPS

THE 1ST FLOOR OF SIMONDS CO MANUFACTURING FACILITY IS AT LEAST 2 FT ABOVE THIS FLOOD STAGE OF 384.6.

SELECT A SECTION BB 340' DS OF AA

DED ELVN AT BB = EL. 372.5 − 640 × .0016 = 371.5

USING MANNING'S EQUATION

$Q = \frac{1.486}{n} \times A \times R^{2/3} \times S^{1/2}$

$= 1.0 \times A \times R^{2/3}$

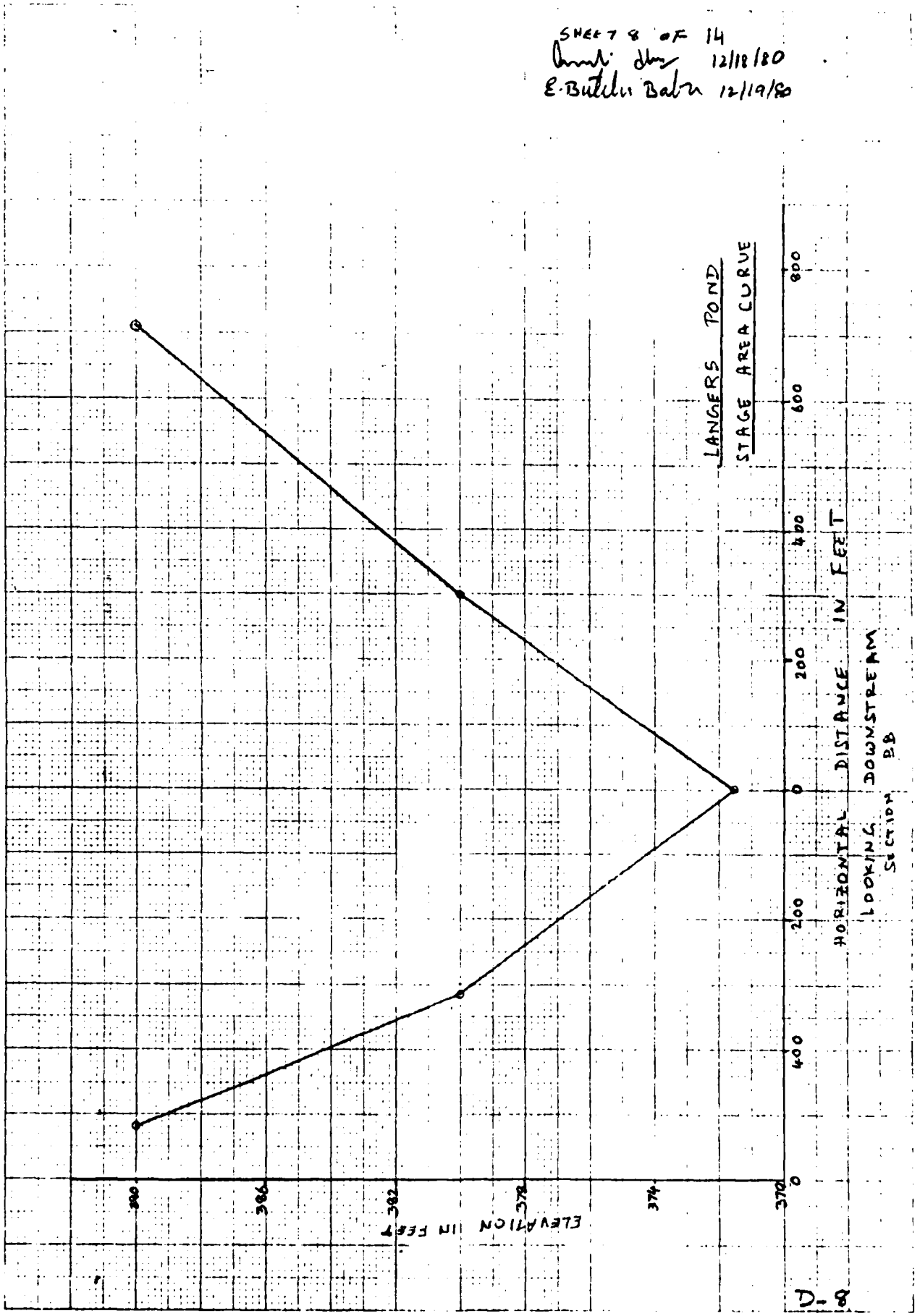
$n = 0.06$ ASSUMED
$S = 0.0016$ (USGS Map)

ELVN	A Sq. Ft.	P	R = A/P	$R^{2/3}$	Q CFS
371.5	0	—	—	—	0
374	219	175.1	1.25	1.16	254
378	1511	465.2	3.25	2.2	3324
380	2614	615.2	4.25	2.62	6862
382	3859	735.2	5.25	3.02	11654

STAGE AREA AND STAGE DISCHARGE CURVES ARE PLOTTED FOR SECTION BB

FOR PEAK OUTFLOW Q_P = 7110 CFS. ELVN = 380.2
AND AREA = 2767 SQ FT

SHEET 8 OF 14
12/18/80
E. Butler Baker 12/19/80



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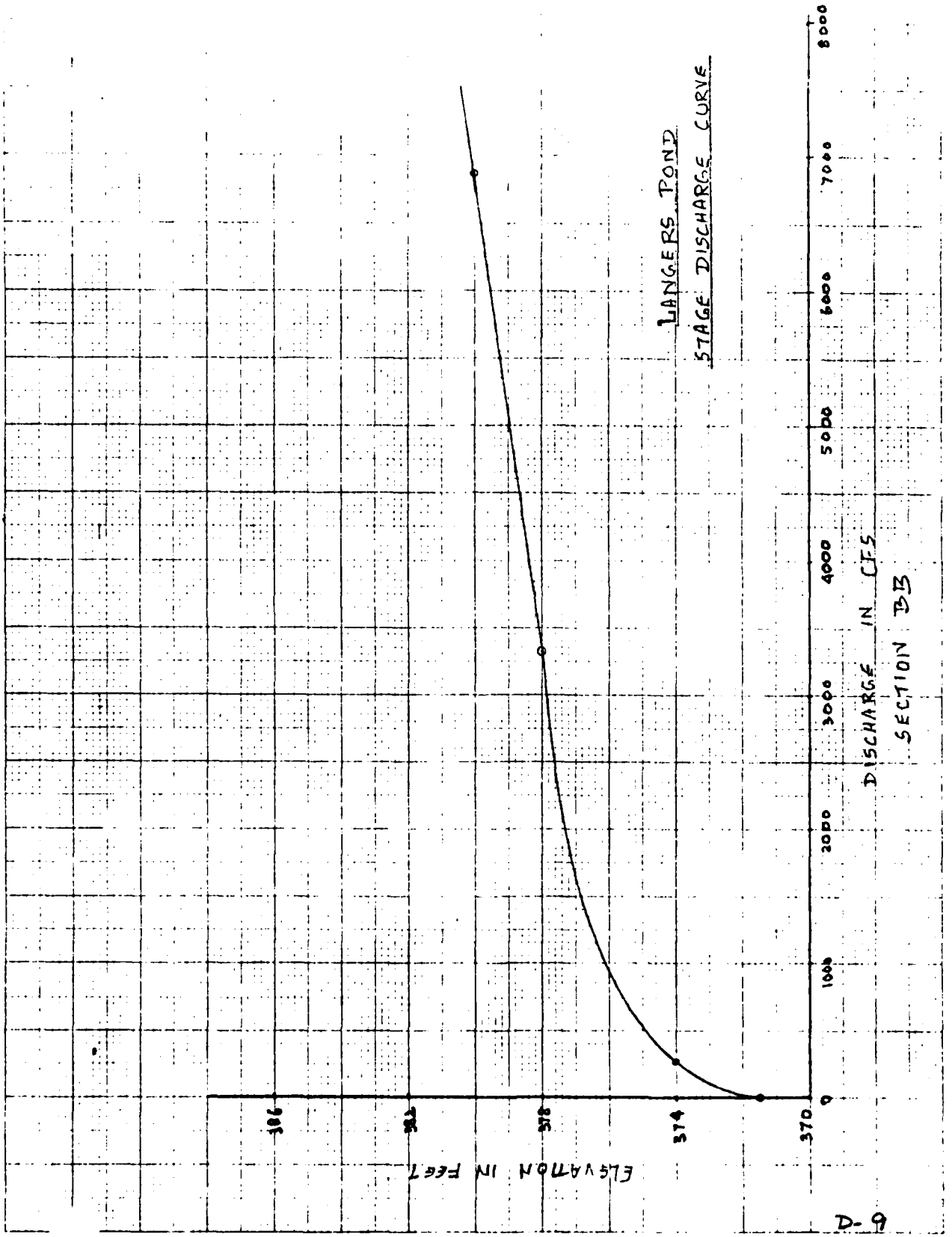
Squares to the Inch

SHEET 4 OF 14
12/18/80
E. Butler Baker 12/19/80



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VOLUME OF REACH $V_1 = \frac{340 \times 2767}{43,560} = 21.6$ AC.FT.

STORAGE REMAINING $= (156 - 14+15) = 141.5$ AC.FT.

TRIAL $QP_2 = QP_1 \left(1 - \frac{V_1}{3}\right)$

$= 7110 \left(1 - \frac{21.6}{141.5}\right) = 6025$ CFS

FOR THIS QP_2, ELVN $= 379.6$ AND AREA $= 2362$ SQ.FT

$V_2 = \frac{340 \times 2365}{43,560} = 18.5$ AC.FT.

RECOMPUTING $QP_2 = 7110 \left(1 - \frac{\frac{21.6 + 18.5}{2}}{141.5}\right) = 6100$ CFS

FLOOD STAGE AT SECTION BB = 379.6

FLOOD DEPTH AT SECTION BB = 379.6 - 371.5 = 8.1 FT

AND VELOCITY AT SECTION BB $= \frac{6100}{2365} = 2.6$ FPS

SELECT A SECTION CC 1290' D/S OF BB

BED ELVN @ SECTION CC = 372.5 - 1930 x .0016 = 369.4

USING MANNING'S EQUATION

$Q = \frac{1.486}{n} \times A \times R^{2/3} \times S^{1/2}$

$= 0.74 \times A \times R^{2/3}$

n = 0.08 ASSUMED
S = .0016 (USGS MAP)

STORAGE REMAINING $= 141.5 - \frac{21.6 + 18.5}{2} = 121.5$ AC.FT.

ELVN	A SQ.FT.	P	R = A/P	$R^{2/3}$	Q CFS
369.4	0	—	—	—	0
372	442	340	1.3	1.2	372
374	1380	600.2	2.3	1.74	1777
376	2971	870.2	3.3	2.22	4716
378	4833	1124.3	4.3	2.64	9442

STAGE AREA AND STAGE DISCHARGE CURVES ARE PLOTTED FOR SECTION CC.

FOR PEAK OUTFLOW Q_{P_1} = 6100 CFS, ELVN = 376.6

AND AREA = 3398 Sq. FT.

VOLUME OF REACH $V_1 = \frac{1290 \times 3398}{43,560} = 100.6$ AC. FT.

TRIAL $Q_{P_2} = Q_{P_1}\left(1 - \frac{V_1}{S}\right)$

$= 6100\left(1 - \frac{100.6}{121.5}\right) = 1049$ CFS

FOR THIS Q_{P_2}, ELVN = 373.2, AREA = 950 Sq. FT

$\therefore V_2 = \frac{1290 \times 950}{43,560} = 28$ AC. FT.

RECOMPUTING $Q_{P_2} = 6100\left(1 - \frac{\frac{100.6+28}{2}}{121.5}\right)$

$= \underline{2870 \text{ CFS}}$

FLOOD STAGE AT SECTION CC = 373.2

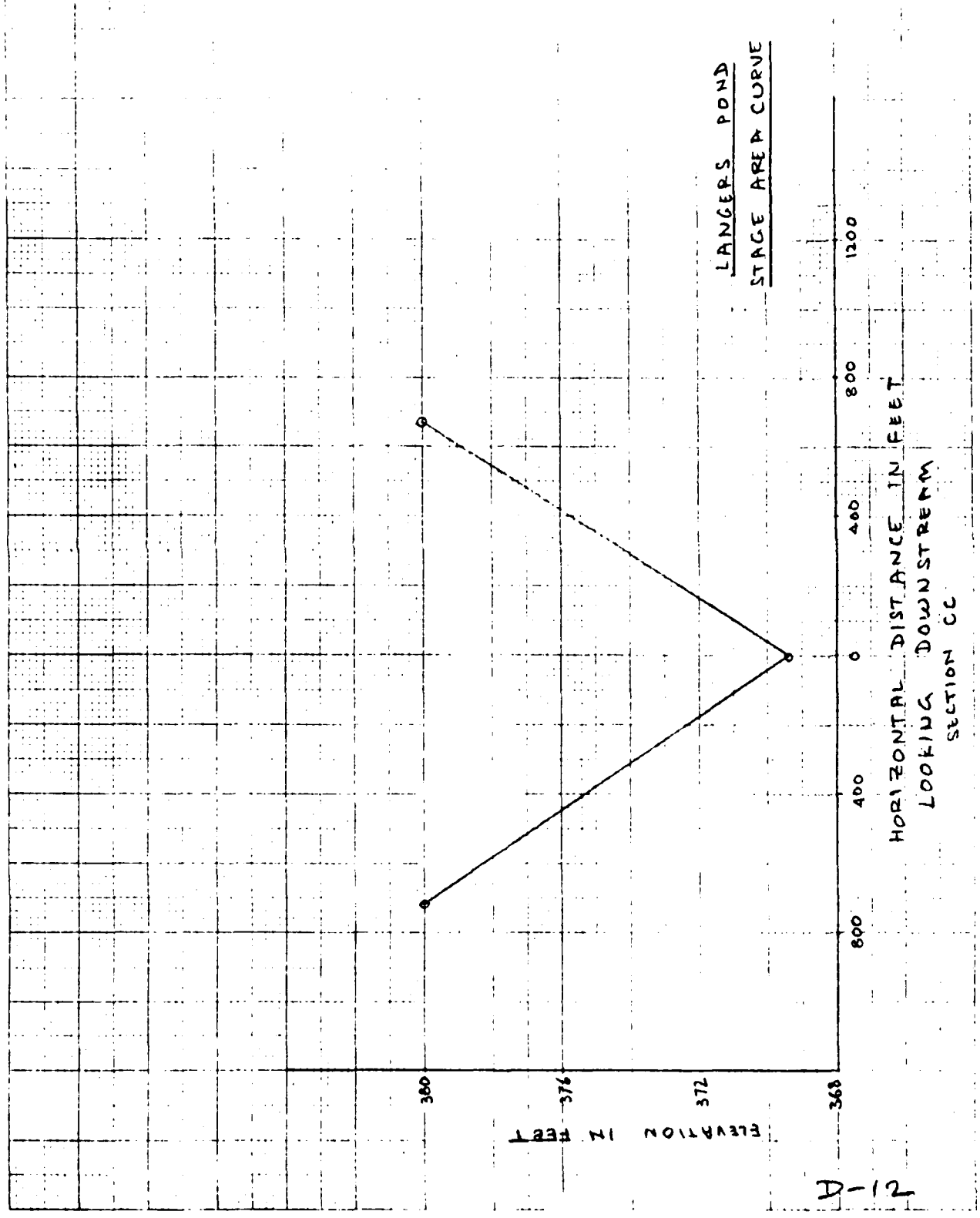
FLOOD DEPTH AT SECTION CC = 373.2 − 369.4 = 3.8 FT.

AND VELOCITY AT SECTION CC $= \frac{2870}{950} = 3.0$ FPS

STORAGE VOLUME REMAINING $= 121.5 - \frac{100.6+28}{2}$

$= 57$ AC. FT.

SHEET 12 OF 14
12/18/80
E. Butala Baton 12/19/80



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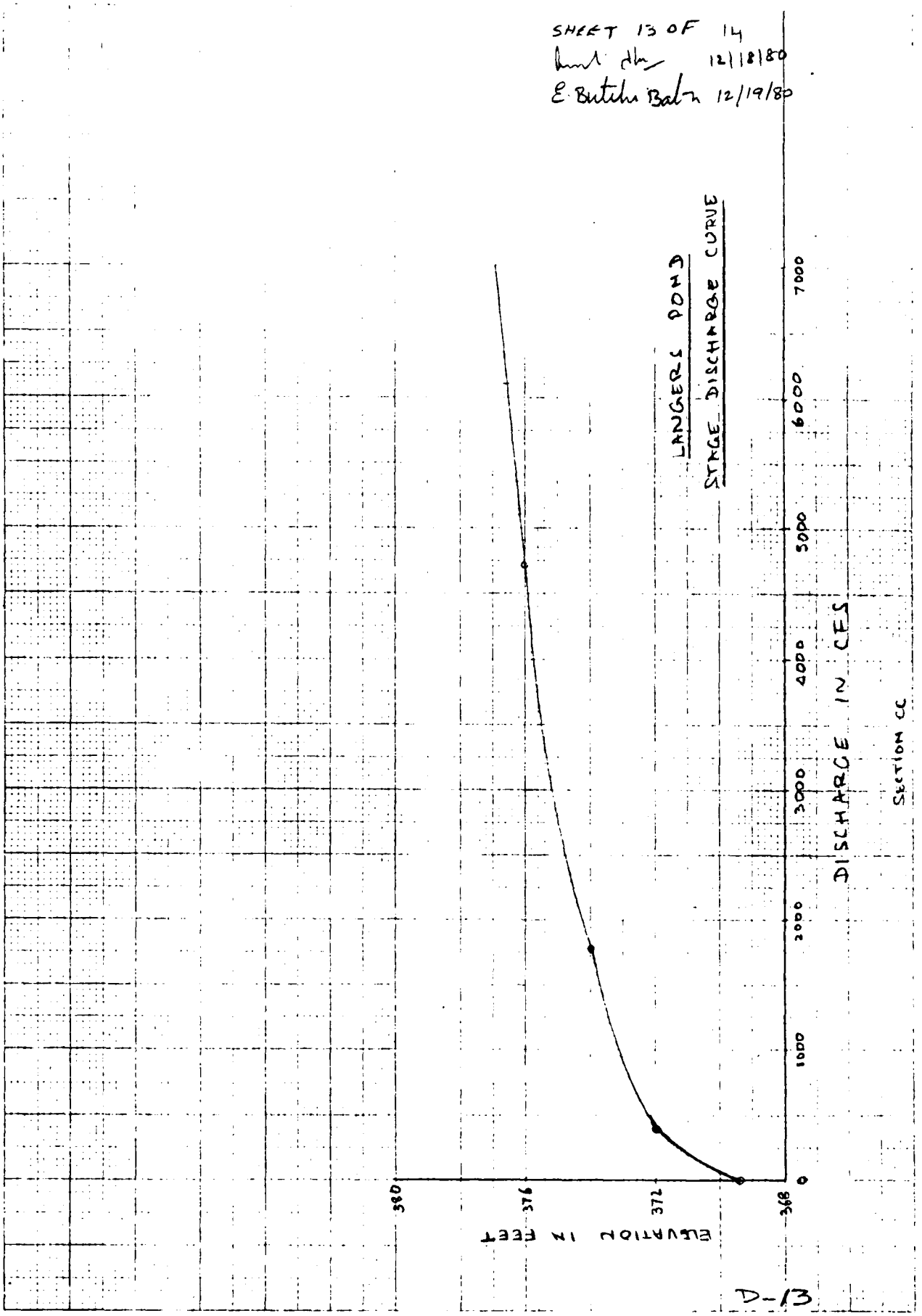
Squares to the Inch

SHEET 13 OF 14

12/18/80

E. Butcher Baker 12/19/80



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Squares to the Inch

PROJECT NON FEDERAL DAM INSPECTION PROJECT NO. 80-10-19 SHEET 14 OF 14
NEW ENGLAND DIVISION COMPUTED BY [illegible] DATE 12/18/80
LANGERS POND DAM CHECKED BY [illegible] DATE 12/19/80

FAILURE HAZARD POTENTIAL

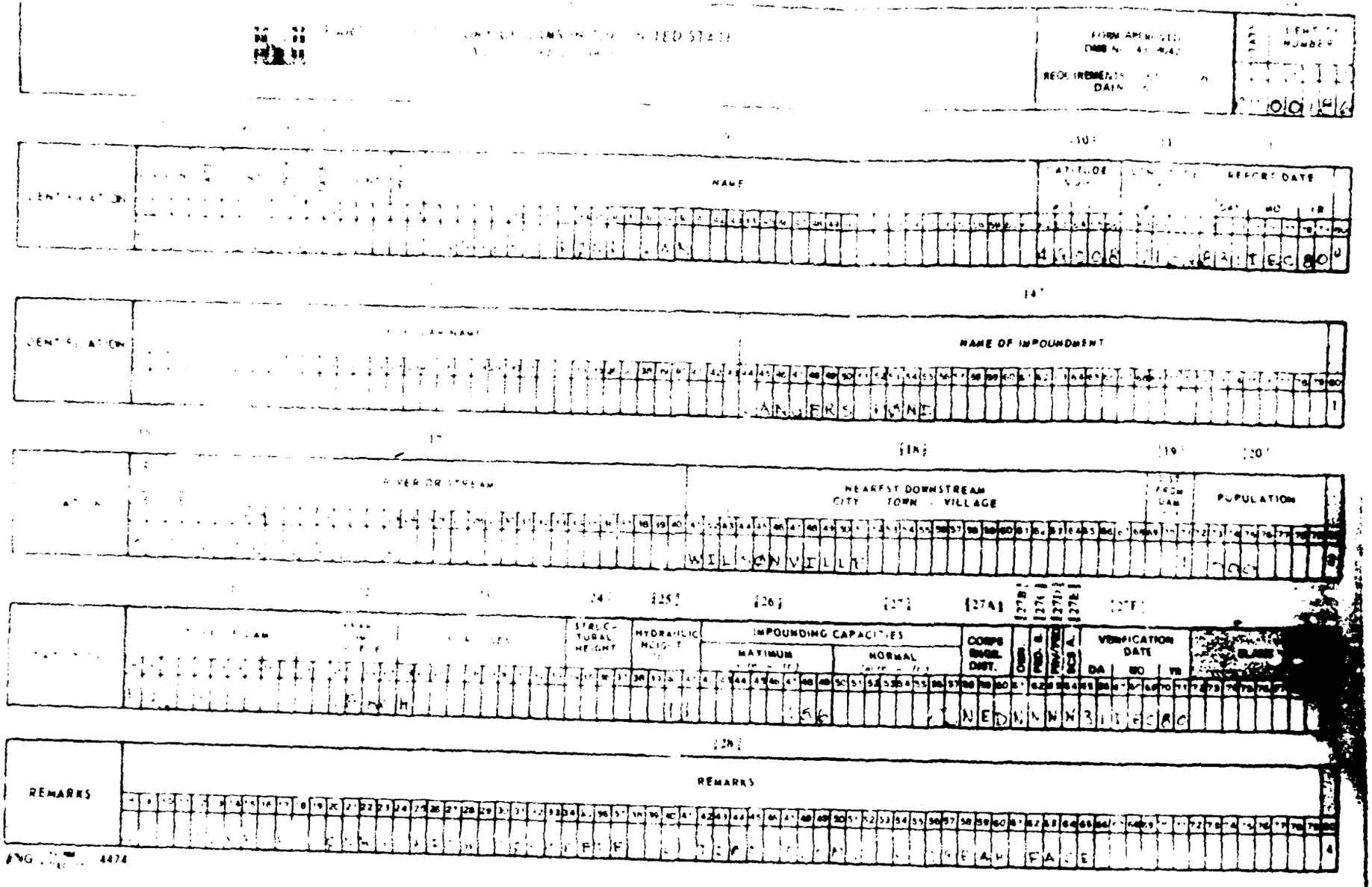
THE FAILURE ANALYSIS WAS DONE WITH POOL AT TOP OF DAM (EL. 386.5 NGVD).

SUMMARY OF BREACH ANALYSIS RESULTS:

LOCATION	DISTANCE FROM DAM FT.	PEAK FLOW RATE CFS	FLOOD STAGE	FLOOD DEPTH FT.	VELOCITY FPS	STORAGE REMAINING AC. FT.
DAM	0	7840	378.7	6.2	—	156
AA	300	7110	384.6	12.6	3.5	141.5
BB	640	6100	379.6	8.1	2.6	121.5

AT SECTION AA, THE FLOOD STAGE IS 384.6 WHEREAS THE 1ST FLOOR ELEVATION OF SIMONDS MANUFACTURING BUILDING IS 386.6. HOWEVER, THE LOWER FLOOR OF THE BUILDING ADJACENT TO THE RIVER COULD BE SUBJECT TO FLOOD DAMAGE. ALSO, THE RAILROAD TRACKS COULD BE INUNDATED IN THE VICINITY OF SECTION AA. BETWEEN SECTION AA AND CC, NO OTHER STRUCTURE IS LIKELY TO BE FLOODED. THE REMAINING STORAGE VOLUME OF 57 AC.FT AT SECTION CC WOULD BE ATTENUATED IN THE NORTH GROSVENORDALE POND (60 AC) WITH A RISE OF WATER ELEVATION BY LESS THAN 1 FT. IN THE POND.

THUS, DUE TO DAM FAILURE SOME ECONOMIC LOSS, PRIMARILY AT SIMONDS CO. COULD BE EXPECTED. HOWEVER, LOSS OF LIFE FROM DAM FAILURE IS UNLIKELY. THEREFORE, THE LANGERS POND DAM IS CLASSIFIED AS A "LOW" HAZARD POTENTIAL DAM.


FORM APPROVED
REMARKS
NAME
NAME OF IMPOUNDMENT
RIVER OR STREAM
NEAREST DOWNSTREAM CITY TOWN VILLAGE
POPULATION
STRUCTURAL HEIGHT
HYDRAULIC HEIGHT
IMPOUNDING CAPACITIES
MAXIMUM
NORMAL
CORPS ENGR. DIST.
VERIFICATION DATE
REMARKS

PART II INVENTORY OF DAMS IN THE UNITED STATES

FORM APPROVED
OMB NO. 49-R0421
REQUIREMENTS CONTROL SYMBOL
DAEN-CWP-17

[1] STATE | IDENTITY NUMBER

[29] [30] [31] [32] [33] [34] [35] [36] [37] [38] [39] [40] [41] [42] [43] [44] [45]

	CREST LENGTH	SPILLWAY WIDTH	SPILLWAY MAXIMUM DISCHARGE	VOLUME OF DAM	POWER CAPACITY INSTALLED	POWER CAPACITY PROPOSED	DC	NAVIGATION LOCKS LENGTH	NAVIGATION LOCKS WIDTH	LENGTH	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH	BLANK	
																	5

[46] [47] [48]

	OWNER	ENGINEERING BY	CONSTRUCTION BY	
MISC DATA				6

[49] [50] [51] [52]

	REGULATORY AGENCY DESIGN	CONSTRUCTION	OPERATION	MAINTENANCE	
MISC DATA					7

[53] [54] [55]

	INSPECTION BY	INSPECTION DATE DAY	MO	YR	AUTHORITY FOR INSPECTION	
MISC DATA						8

[56]

	REMARKS	
REMARKS		9

ENG [illegible] DEC 77 4474A

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PART III INVENTORY OF DAMS IN THE UNITED STATES
SUPPLEMENTARY DATA

STATE	IDENTITY NUMBER
CT	00018

(A-2) (A-3) (A-4) (A-5)

LOCATION	NAME	NPDES PERMIT NO	STATE NUMBER	FERC NO	USGS SHEET
	DUDLEYVILLE				WEBSTER MASS-CONN

(B-1) (B-2) (B-3) (B-4) (B-5) (B-6) (B-7) (B-8) (B-9) (B-10) (B-11) (B-12)

DRAINAGE CHARACTER	DRAINAGE AREA SQ MI	FLOW DATA MIN CFS	FLOW DATA AVG CFS	FLOW DATA MAX CFS	CREST ELEV MSL	ABUT ELEV MSL	USABLE STORAGE ACRE FEET	RESERVOIR AREA ACRES	FLASH BOARD HT FEET	OUTLET CONDUITS NO	OUTLET CONDUITS SIZE	INVERT ELEV MSL
	3				385	387	61	35				

(C-2) (C-3) (C-4) (C-5) (C-6) (C-7)

POWER DATA	GENERATION UNITS INSTALLED NO	GENERATION UNITS INSTALLED CAP KW	GENERATION UNITS PLANNED NO	GENERATION UNITS PLANNED CAP KW	AVERAGE ANNUAL GENERATION KWH	LAST GEN YEAR	RETIRED YEAR	FORMER USE	CAPACITY FACTOR

NBS FORM 1 JAN 79 80(TEST)

ee ee A143404 (U) FIELD/GROUP eeeeee

UNCLASSIFIED TITLE

NATIONAL PROGRAM FOR INSPECTION OF NON-FEDERAL DAMS. LANGERS POND DAM (CT 00186), WILSONVILLE CONNECTICUT, FRENCH RIVER . PHASE I INSPECTION REPORT.

ABSTRACT

(U) LANGERS POND DAM IS A 10.5 FOOT HIGH, L-SHAPED, RUN-OF-THE-RIVER STONE MASONRY GRAVITY STRUCTURE. THE DAM WAS CONSTRUCTED IN 1880 TO SUPPLY WATER FOR THE GENERATION OF POWER FOR THE MILL AT THE DAM, NOW THE SIMONDS COMPANY. IN RECENT TIMES, THE POWER GENERATING FACILITIES HAVE BEEN INOPERABLE, HOWEVER, THE PRESENT OWNER IS IN THE PROCESS OF RESTORING THESE FACILITIES. THE DRAINAGE AREA IS APPROXIMATELY 97 SQUARE MILES AND THE MAXIMUM IMPOUNDMENT TO THE TOP OF THE DAM IS 156 ACRE-FEET. BECAUSE THE DAM IS A RUN-OF-THE-RIVER STRUCTURE, THE ENTIRE LENGTH OF THE DAM IS USED AS A SPILLWAY. IT IS 160 FEET IN LENGTH, AND CONSTRUCTED OF STONE MASONRY WITH A CONCRETE SECTION ALONG THE UPSTREAM FACE. BASED UPON THE VISUAL INSPECTION, THE PROJECT APPEARS TO BE IN GOOD CONDITION. THE FOLLOWING FEATURES WHICH COULD INFLUENCE THE FUTURE CONDITION AND/OR STABILITY WERE IDENTIFIED. (1) STONES APPEAR TO HAVE BECOME DISLODGED FROM THE DOWNSTREAM FACE AT THE LEFT SIDE OF THE DAM; (2) THE DOWNSTREAM END OF THE LEFT TRAINING WALL NEEDS REPAIR. THE WALL IN THIS AREA IS BROEKN UP AND FALLING INTO THE CHANNEL. (3) THERE IS NO LOW-LEVEL OUTLET AT THE DAM. HOWEVER, IF THE EXISXTING SLUICEWAY AND GATES ARE REPAIRED, THIS SHOULD PROVIDE A SUFFICIENT OUTLET.

POSTING TERMS ASSIGNED

CONCRETE SECTION
USE CONCRETE

DRAINAGE AREA
USE DRAINAGE

INSPECTION OF NON-FEDERAL DAMS
USE INSPECTION

POWER GENERATING FACILITIES
USE FACILITIES
POWER

VISUAL INSPECTION
USE VISUAL INSPECTION

CONNECTICUT
USE CONNECTICUT

FRENCH RIVER
USE FRANCE
RIVERS

POND DAM
USE DAMS
PONDS

TRAINING WALL NEEDS REPAIR
USE REPAIR
TRAINING
WALLS

PHRASES NOT FOUND DURING LEXICAL DICTIONARY MATCH PROCESS

10.5 FOOT
160 FEET
156 ACRE-FEET
1880 TO SUPPLY WATER

97 SQUARE

END

FILMED

9-84